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Ron Goldy
Southwest Michigan Research and Extension, goldy@anr.msu.edu

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Winter Melon (*Benincasa hispida*) as a New Crop for Southwest Michigan

Dr. Ron Goldy, Southwest Michigan Research and Extension Center, 1791
Hillandale Road, Benton Harbor, Michigan 49022
goldy@anr.msu.edu

Objective:

To evaluate the commercial potential of winter melon (Chinese wax gourd) under southwest Michigan growing conditions.

Summary:

All eight entries produced fruit, however, Long Giant's maturity period makes it unsuitable for production in Southwest Michigan. Large Round was the entry with the most commercial potential based on fruit size and yield. Southern Dark skin has potential if a larger melon is desired. The melons were generally well received by customers when sold through farmer's markets or directly to restaurants. The biggest concern of buyers was a size of 15 pounds or greater. Many non-Asian buyers will have to be educated on how to use the melons.

Materials and Methods:

Fertilizer: Prior to planting 33-0-0, 0-0-60, 95% sulfur and Solubor were broadcast and incorporated at 100, 175, 28 and 13 pounds/acre, respectively. After planting, 42 additional pounds of nitrogen was applied through the drip system as 28% nitrogen beginning 13 June and ending 1 August.

Planting: All entries were planted in the greenhouse 2 April, 2016 into 32 cell trays. Planting to the field was done 26 May, 2016 on plastic mulched, 6" high raised beds into which a drip tape was inserted at the time of bed shaping. Rows were spaced 5.5' on center with an in row spacing of 6' providing 1320 plants/acre. The trial was planted for observation only and was not subjected to statistical analysis. All seed was obtained from Evergreen Y. H. Enterprises, P.O. Box 17538, Anaheim, California.

Plant Care: Plots were irrigated as needed and disease and insect pests controlled using commercially recommended cultural practices. Weeds were controlled using the black plastic and suppressed between rows with Gramoxone.

Harvest and data collection: Harvest was conducted when fruit was considered to be mature. It was then counted and weighed. Data was not subjected to statistical analysis.

Results and Discussion:

Winter melon, or Chinese wax gourd, is used extensively in Southeast Asian cuisine. It is used in soups and stir fries of various kinds from India through China. It can also be stored at room temperature for several months, hence the name "winter melon".

Although in a different genus, its growing requirements are similar to watermelon, a crop commonly grown in Southwest Michigan. For this reason, eight varieties were planted at

the Southwest Michigan Research and Extension Center in 2016 (Table 1.) to determine their commercial potential. The eight varieties had a range of size, shape and maturity (Table 1 and Figures 1 and 2).

Table 1. Number of fruit, and average fruit weight of eight winter melon varieties grown at the Southwest Michigan Research and Extension Center, Benton Harbor, Michigan in 2016.

Variety	Fruit Number	Avg. Fruit Weight (lbs.)	No. of Plants	Fruit per Plant
Hybrid Small Round	195	4.6	15	13
Large Round	29	23.0	5	5.8
Long Giant	3	62.1	6	0.5
Southern Dark Skin	23	31.3	11	2.1
Large Oblong	104	4.5	9	11.6
Hybrid Wonder Wax	29	15.1	16	1.8
Hybrid Thao Nuan	157	9.62	?	?
Hybrid Thai Small	115	8.0	17	6.8

Having little experience in producing winter melons, it is difficult to determine maturity. As fruit matures it generally develops a white wax coating that easily rubs off onto hands and clothes. The fruit also have stiff hairs that irritate the skin so it is best to handle them with gloves. Southern Dark Skin does not produce the wax but does have the hairs. Large Oblong matured first, not only developing the waxy coating earlier but the plants also died, exposing fruit to the sun (Figure 3). They were harvested in early September. Other selections were harvested mid-September through October. Harvest could possibly have been done earlier but was delayed due to lack of experience with the fruit.



Figure 1. Six winter melons grown at the Southwest Michigan Research and Extension Center, Benton Harbor, Michigan in 2016. Left to right: Hybrid Small Round, Large Round, Large Oblong, Hybrid Wonder Wax, Hybrid Thao Nuan and Hybrid Thai Small.



Figure 2. Long Giant (left) and Southern Dark Skin (right) winter melons grown at the Southwest Michigan Research and Extension Center, Benton Harbor, Michigan, 2016.



Figure 3. Long Oblong winter melon showing the white, waxy coating and senescing leaves indicative of harvest.

Hybrid Wonder Wax had extremely showy flowers (Figure 4) that were readily visible above the leaf canopy. The other entries had their flowers down under the leaf canopy. The exposed flowers may aid in attracting pollinators and increasing fruit set but other entries did not seem to suffer decreased fruit set. Long Giant had a low fruit set but is



Figure 4. Hybrid Wonder Wax with its showy flowers above the leaf canopy.

not well adapted to Southwest Michigan anyway since it requires 150 or more days to maturity.

An effort was made at marketing the winter melons through farmer's markets and Chinese restaurants. Our experience found shape was not a concern but size was. Most buyers wanted large fruit – 15 pounds or higher but they would take smaller melons down to 10 pounds. Melons were sold either by the melon or by the pound. Most melons of adequate size sold for either \$4 or \$5 a melon or \$0.30 a pound.

Of the eight varieties evaluated, Large Round was the best performer in terms of number of fruit and fruit size. Other entries produced more fruit but it was smaller which was not as desirable for buyers. Hybrid Small Round not only had small fruit but also had fairly thin flesh. Of the two large fruit, Southern Dark Skin has more potential than Long Giant due to higher fruit set and shorter maturity time.